

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: : Date: October 16, 2003
 Han et al. : Attorney Docket No.: 001.3000
 Serial No.: To be assigned : Art Unit: Unknown
 Filing Date: October 16, 2003 : Examiner: Unassigned
 For: ATTENUATED PHASE SHIFT MASK FOR EXTREME ULTRAVIOLET
 LITHOGRAPHY AND METHOD THEREFORE

INFORMATION DISCLOSURE STATEMENT (IDS)

Commissioner for Patents
 P.O. Box 1450
 Alexandria, VA 22313-1450

SIR:

In accordance with 37 C.F.R. §1.56 and in compliance with 37 C.F.R. §§1.97 and 1.98, the references listed on attached Form PTO/SB/08 and/or subsequently identified herein, are being submitted herewith for consideration by the United States Patent and Trademark Office.

I. COPIES

- a. ☒ A legible copy of (i) each U.S. and foreign patents; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed, is included herewith.
- b. ☐ Any patents, publications or other information which are listed on PTO/SB/08 which are not enclosed herewith were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. §120:

U.S. Serial Number

U.S. Filing Date

II. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

- a. ☒ Except as may be indicated below in (b) of this section, all of the patents, publications or other information are in the English language (concise explanation not required).

- b. ☐ A concise explanation of the relevance of all patents, publications or other information listed that is not in the English language is as follows:
- c. ☐ The following additional information is provided for the Examiner's consideration:

III. ☐ CROSS REFERENCE TO RELATED APPLICATION(S)

The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this (these) applications to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. §122.

Serial No.

Filing Date

Art Unit

FEES

IV. ☒ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(b): (check one box)

- a. ☒ within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. §1.97(b)(1)). No fee or statement is required.
- b. ☐ within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. §1.97(b)(2)). No fee or statement is required.
- c. ☐ before the mailing date of a first Office Action on the merits (37 C.F.R. §1.97(b)(3)). No fee or statement is required.
- d. ☐ before the mailing date of a first Office Action after the filing of a request for continued examination under § 1.114 (37 C.F.R. § 1.97(b)(4)). No fee or statement is required.

V. ☐ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(c): (check one box)

before the mailing date of either a Final Office Action under 37 C.F.R. §1.113 (See 37 C.F.R. §1.97(c)), or a Notice of Allowance under 37 C.F.R. §1.311 (See 37 C.F.R. §1.97(c)).

- a. ☐ No statement; therefore, charge deposit account 50-2117 the fee set forth in 37 C.F.R. §1.17(p).
- b. ☐ See the statement below. No fee is required.

VI. ☐ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(d):

on or before payment of the issue fee and is accompanied by the following:

- 1) a statement under 37 C.F.R. §1.97(e) as provided below; and
- 2) charge deposit account 50-2117 the petition fee set forth in §1.17(i).

VII. Statement under 37 C.F.R. §1.97(e) (check only one box, if applicable)

The undersigned hereby states that

- a. ☐ each item of information contained in the IDS was cited in a communication from a foreign Patent Office is a counterpart foreign application not more than three months prior to the filing of IDS; or
- b. ☐ no item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application, and to knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement, or
- c. ☐ some of the items of information contained in the IDS were cited in a communication from a foreign Patent Office. As to this information, the undersigned states that each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby states that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application or, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement.

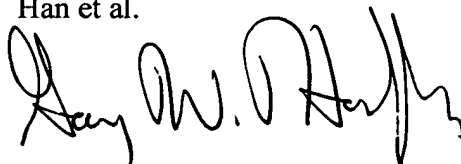
VIII. PAYMENT OF FEES

- ☐ A check in the amount of _____ is enclosed for the above-identified fee(s).
- ☐ Please charge Deposit Account No. 50-2117 in the amount of \$180.00 for the above-indicated fee(s).
- ☒ If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 50-2117.
- ☐ Two Copies of this paper are attached for Deposit Account charges and debits.

The above references are being cited only in the interests of candor and without any admission that they constitute statutory prior art or contain matter which anticipates the invention or which would render the same obvious, either singly or in a combination, to a person of ordinary skill in the art.

If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 50-2117.

Respectfully submitted,
Han et al.



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Customer Number 29906

Enclosures: ☒ PTO/SB/08
☒ References
☐ Foreign Search Report
☐ Other:

Substitute for form 1449A/PTO

(use as many sheets as necessary)

Complete if Known

Application Number

To be assigned

Filing Date

October 16, 2003

First Named Inventor

Sang-In Han

Group Art Unit

Unknown

Examiner Name

Unknown

Sheet

1

of

2

Attorney Docket Number

001.3000

U. S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

Examiner Signature		Date Considered	
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation, if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English Language Translation is attached.

+

Please type a plus sign (+) inside this box. FORM PTO/SB/08

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known			
		Application Number	To be assigned		
		Filing Date	October 16, 2003		
		First Named Inventor	Sang-In Han		
		Group Art Unit	Unknown		
Examiner Name	Unknown				
Sheet	2	of	2	Attorney Docket Number	001.3000

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		H.L. CHEN and L.A. WANG, "Simulation on a New Reflection Type Attenuated Phase Shifting Mask for Extreme Ultraviolet Lithography", Institute of Electro-Optical Engineering National Taiwan University, Taipei, Taiwan, R.O.C.; Part of the SPIE Conference on Emerging Lithographic Technologies III, Santa Clara, California, March 1999, SPIE Vol. 3676, 0277-786X/99.	
		PAWITTER MANGAT, SCOTT HECTOR, STEWART ROSE, GREG CARDINALE, EDITA TEJNIL, ALAN STIVERS, "EUV Mask Fabrication With Cr Absorber", Motorola, Inc., Advanced Products Research and Development Laboratory, Austin TX, Sandia National Laboratories, Livermore, CA, Intel Corporation, Santa Clara, CA; In Emerging Lithographic Technologies IV, Elizabeth A. Dobisz, Editor, Proceedings of SPIE Vol. 3997 (2000), 0277-786X/00.	
		STEPHEN P. VERNON, PATRICK A. KEARNEY, WILLIAM M. TONG, SHON PRISBREY, CINDY LARSON, CRAIG E. MOORE, FRANK W. WEBER, GREG CARDINALE, PEI-YANG YAN, SCOTT D. HECTOR, "Masks for Extreme Ultraviolet Lithography", Lawrence Livermore National Laboratory, Livermore, CA, Sandia National Laboratories, Livermore, CA, Intel Corporation, Santa Clara, CA, Motorola, Inc., Austin, TX; Part of the BACUS Symposium on Photomask Technology and Management, Redwood City, CA, September 1998, SPIE Vol. 3546, 0277-786X/98.	

Examiner Signature		Date Considered	
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¹ Unique citation designation number. ² Applicant is to place a check mark here if English Language Translation is attached.